IN THE CLAIMS:

Claim 1 has been cancelled:

1. (Cancelled).

Claim 2 has been amended as follows:

2. (Currently amended) A method according to claim [[1]] 14, comprising implementing the vapor deposition at temperatures between 50°C and 300°C and a pressure between 0.001 Pa and 3 Pa.

Claim 3 has been amended as follows:

3. (Currently amended) A method according to claim [[1]] 14 comprising implementing a temperature treatment of the luminophore layer the vapor deposition and a cooling.

4. (Previously presented) A method according to claim 3, comprising implementing the temperature treatment after cooling at room temperature in the presence of water vapor.

5. (Previously presented) A method according to claim 3 comprising implementing the temperature treatment in a range from 100°C to 300°C.

6. (Previously presented) A method according to claim 3, comprising implementing the temperature treatment in a mixture of inert gas and water vapor.

7. (Previously presented) A method according to claim 3, comprising implementing the temperature treatment in humid air.

Claim 8 has been amended as follows:

8. (Currently amended) A method according to claim [[1]] 14, comprising using $Cs_xEu_yBr_{(x+2y)}$ as said alkali halogenide phase and using CsBr as said alkali halogenide, to form an x-ray storage luminophore CsBr : $Cs_xEu_yBr_{(x+2y)}$.

Claim 9 has been amended as follows:

9. (Currently amended) A method according to claim ~~1 through 8~~ 14 comprising simultaneously vaporizing a quantity x of the alkali halogenide phase and a quantity (600g –x) of the alkali halogenide.

Claim 10 has been amended as follows:

10. (Currently amended) A method according to claim [[1]] 14, comprising mixing the alkali halogenide phase and the alkali halogenide and introducing the mixture into a vaporization vessel for vaporization thereof.

Claim 11 has been amended as follows:

11. (Currently amended) A method according claim [[1]] 14 comprising separately introducing the alkali halogenide phase and the alkali halogenide into respective vaporization vessels and simultaneously vaporizing said alkali halogenide phase and said alkali halogenide in the respective vacuum vessels.

Claim 12 has been amended as follows:

12. (Currently amended) A needle-shaped x-ray luminophore with at least one alkali metal, produced according to the method according claim [[1]] 14 having the formula:

$$\left(\left(M'^{+}\,H'^{-}\right)_a\left(M''^{+}\,H''^{-}\right)_{(1-a)}\right)_k : \left(M'^{+}{}_x S^{z+}{}_y H'^{-}{}_x H'''^{-}{}_{z*y}\right)_b \left(M''^{+}{}_x S^{z+}{}_y H''^{-}{}_x H'''^{-}{}_{z*y}\right)_c \left(M'^{+}{}_x S^{z+}{}_y H''^{-}{}_x H'''^{-}{}_{z*y}\right)_d \left(M''^{+}{}_x S^{z+}{}_y H'^{-}{}_x H'''^{-}{}_{z*y}\right)_e$$

wherein M^+ is at least one metal ion selected from the group consisting of Na, K, Rb and Cs, H^- is at least one halogenide selected from the group consisting of F, Cl, Br and I and S^{z+} is at least one lanthanide ion selected from the group consisting of La, Ce, Pr, Nd, Pm, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb or Lu.

13. (Previously presented) An x-ray luminophore according to claim 12, comprising an x-ray storage luminophore having the formula:

$$CsBr : Cs_xEu_yBr_{(x+2y)}.$$

Add the following new claim:

14. (New) A method for producing a luminophore comprising the steps of:

in a vaporization phase, simultaneously vaporizing an alkali halogenide phase with an alkali halogenide and thereby producing vaporized material; and

vacuum-depositing said vaporized material on a substrate and thereby producing a needle-shaped x-ray luminophore having at least one alkali metal on said substrate.